

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-4 (Canceled).

Claim 5 (Original): A disk drive comprising:

an optical head for emitting a laser beam so as to illuminate a disk-shaped storage medium thereby writing or reading data on or from the disk-shaped storage medium, grooves serving as recording tracks being formed in a wobbling fashion on the disk-shaped storage medium, pre-pits being formed on lands between adjacent grooves;

a push-pull signal generator for generating a push-pull signal from reflected-light information detected by the optical head;

a pre-pit detector for comparing the push-pull signal with a reference signal and outputting a comparison result as a pre-pit detection signal;

a counter for counting the number of pulses included in the detection signal output from the pre-pit detector, for each of predetermined periodic intervals; and

a controller for changing the reference signal depending on the count value of the counter.

Claim 6 (Original): A disk drive according to claim 5, wherein

the disk-shaped storage medium represents, using the pre-pits, address information indicating an address on the disk; and

the disk drive further comprising an address decoder for acquiring the address information represented by the pre-pits, from the noise-removed detection signal.

Claim 7 (Original): A disk drive according to claim 5, wherein the controller controls the reference signal such that the level of the reference signal is reduced when the count value is greater than a predetermined value, while the level of the reference signal is increased when the count value is smaller than the predetermined value.

Claim 8 (Previously Presented): A disk drive comprising:

- an optical head for emitting a laser beam so as to illuminate a disk-shaped storage medium thereby writing or reading data on or from the disk-shaped storage medium, grooves serving as recording tracks being formed in a wobbling fashion on the disk-shaped storage medium, pre-pits being formed on lands between adjacent grooves;
- a push-pull signal generator for generating a push-pull signal from reflected-light information detected by the optical head;
- a pre-pit detector for comparing the push-pull signal with a reference signal and outputting a comparison result as a pre-pit detection signal, said pre-pit detection signal including a pulse having a pulse width;
- a noise remover for detecting a noise pulse on the basis of the pulse width of the pulse included in the detection signal output from the pre-pit detector, removing the noise pulse from the detection signal, and output the detection signal including no noise pulse;
- a counter for counting the number of pulses included in the detection signal output from the pre-pit detector or included in the detection signal output from the noise remover, for each of predetermined periodic intervals;
- a controller for changing the reference signal depending on the count value of the counter; and
- an address decoder for acquiring the address information represented by the pre-pits, from the noise-removed detection signal.

Claim 9 (Previously Presented): A disk drive according to claim 8, wherein the pre-pits on the disk-shaped storage medium are encoded as represents, using the pre-pits, address information indicating an address on the disk; and the disk drive further comprising an address decoder for acquiring the address information represented by the pre-pits, from the noise-removed detection signal.

Claim 10 (Original): A disk drive according to claim 8, wherein the noise remover includes a pulse width detector for detecting the pulse width of a pulse included in the detection signal output from the pre-pit detector, and wherein when a pulse with a pulse width smaller than a predetermined value is detected by the pulse width detector, the noise remover removes the detected pulse as a noise pulse.

Claim 11 (Original): A disk drive according to claim 10, wherein the noise remover is capable of changing the reference value of the pulse width.

Claim 12 (Original): A disk drive according to claim 6, wherein the controller controls the reference signal such that the level of the reference signal is reduced when the count value is greater than a predetermined value, while the level of the reference signal is increased when the count value is smaller than the predetermined value.

Claim 13 (Canceled).

Claim 14 (Original): A method of detecting pre-pits formed on a disk-shaped storage medium, grooves serving as recording tracks being formed in a wobbling fashion on the disk-

shaped storage medium, address information being represented by the pre-pits formed on lands between adjacent grooves, the method comprising the steps of:

generating a push-pull signal from reflected-light information obtained when the disk-shaped storage medium is illuminated with a laser beam;

comparing the push-pull signal with a reference signal and outputting a comparison result as a pre-pit detection signal;

counting the number of pulses included in the output detection signal, for each of predetermined periodic intervals; and

changing the reference signal depending on the count value.

Claim 15 (Previously Presented): A method of detecting pre-pits formed on a disk-shaped storage medium, grooves serving as recording tracks being formed in a wobbling fashion on the disk-shaped storage medium, address information being represented by the pre-pits formed on lands between adjacent grooves, the method comprising the steps of:

generating a push-pull signal from reflected-light information obtained when the disk-shaped storage medium is illuminated with a laser beam;

comparing the push-pull signal with a reference signal and outputting a comparison result as a pre-pit detection signal including a pulse having a pulse width;

detecting a noise pulse on the basis of the pulse width of the pulse included in the output detection signal, removing the detected noise pulse from the detection signal, and outputting the detection signal including no noise pulse;

counting the number of pulses included in the output detection signal, for each of predetermined periodic intervals; and

changing the reference signal depending on the count value.